which the touchpad is preferably arranged into non-planar configurations, e.g. curves, domes or orthogonal structures. Instead of substantially linear interpolation between the sensing conductors **2**, as in the previous embodiments, a non-planar conductive layer **4** causes the interpolation to be performed on the basis of the shape, or surface contour, of the layer **4**. This provides the advantage that regions which otherwise would not be responsive to touch, such as corners of boxes or other pointed extremities, may now act as sensing regions, since the layer acts to concentrate the electric field passing between the sensing conductors **2** in the region of the extremities towards the membrane **3**. In a non-planar touchpad configuration, the interpolation will be performed substantially aligned with the surface contour of the conductive layer **4**. Advantageously, since the interpolation is performed across the surface contour of the conductive layer **4**, the conductive layer **4** need not be in contact with the membrane **3**, or dielectric medium **6**, in the region of the extremity, such that small air gaps or spacings etc. (as shown in **FIG. 24**), do not significantly effect determination of the touch position.

[**0102**] The touchpad may be formed into complex 2 and 3 dimensional shapes, using any conventional technique, including, but not limited to, vacuum forming and injection moulding. The touchpad may be resilient or deformable, and depending on the materials used, may have any degree of required flexibility.

[**0103**] Thus it is possible with the present invention to produce many different 2D and 3D touch interactive materials and products. For example, the present invention could be used to produce mobile phones with the injection moulded case itself being touch interactive, so there would be no need for a separate keypad and/or touchscreen to be added. For these applications, the conductive medium **4** may be opaque, thus allowing the use of many more conductive materials, including materials having both surface and/or bulk conductivity.

[**0104**] Touch sensitive and non-touch sensitive areas can exist in the same injection moulding by zoning the sensing conductors **2** and having conducting and non-conducting clear and opaque plastics in the same injection moulding. By doing so, the front, back, sides, top, bottom, and all edges and corners could be made to be touch sensitive. Surfaces may be touchscreens, keypads, digitising tablets, trackerballs or change functionality from one to the other, when, and as required.

[**0105**] In alternative embodiments, the conductive layer **4** may be a conductive fabric, conductive rubber, conductive foam, an electrolyte (e.g. sea water), a conductive liquid or gel, or even a conductive gas, such as a plasma. However, it is to be appreciated that several of these materials would require some form of containment means, such as an outer membrane in order to maintain their position and to provide protection for the material. Conductive media that distort, or change resistance, when touched have the added advantage that the induced capacitive signal increases more strongly than compared to non-distorting media, when pressure is applied, allowing greater pressure sensing resolution. This may be advantageous in touchpad applications that require different pressures to be exerted to operate a particular function, such as an accelerator button. A disadvantage however, is that materials which resiliently distort typically have reduced operating lifetimes. In practice, the finger tip itself distorts when greater pressure is applied, and this can be detected by the touchpad without the material itself having to distort.

[**0106**] If a conductive support and sensing layer **4**A is formed, as described in relation to **FIG. 5**, into a non-planar configuration as shown in **FIG. 19**, the layer deforms the capacitance detection system and allows the finger **1** to be detected at a point that would not be possible if a purely dielectric system, as described in U.S. Pat. No. 6,137,247 was used. As shown in **FIG. 20**, edges and corners of a non-planar touchpad are still operable to detect a touching action, even though the sensing conductors **2** are relatively remote from the point of touch.

[**0107**] The surface of the touchpad may preferably be flat and/or curved and/or have surface texturisation, such as dimples, grooves or hollows etc. as shown in **FIG. 21**. Surface distortions allow the point of touch to be redirected, while still being accurately detected by the sensing layer. The dimples shown in **FIG. 21**, can extend some distance away from the conductive layer **4**, for example by about 1 m or more. The tip of the dimples may be connected back to the conductive layer **4** by any suitable conductor e.g. an electrical wire (as shown in **FIG. 25**). Touching the tip of the dimples would have the same effect as touching the conductive layer **4**, at the point where the wire is joined to the layer **4**. The wire may be electrically, or capacitively, linked to the conductive layer **4**.

[**0108**] In preferred embodiments, the conductive medium **4** may electrically float, in that it has no electrical connection to the sensing conductors **2** or to any suitable scanning apparatus. Alternatively, the conductive medium may be connected to ground, either directly by an electrical connection **13** e.g. a wire, or by a resistor, as shown in **FIG. 22**, thus enabling the conductive medium **4** to perform the secondary function of an anti-static and emi shielding surface.

[**0109**] A suitable scanning apparatus for use with the touchpad of the present invention is described in EP 0185671 and in particular in U.S. Pat. No. 6,137,427. The scanning apparatus samples each conductor of the first and second series of sensing conductors **2** in turn, according to an analogue multiplexer sequence, and stores each capacitance value in memory. These values are compared with reference values from earlier scans, and with other capacitance values in the same scan from the other conductors in order to detect a touching event. The touching event must be above a threshold value in order to be valid. By having several threshold values it is possible to determine the pressure of the touch or distance that the finger **1** is away from the surface of the touchpad.

[**0110**] If a battery or solar cells are used, there may be no available ground connection, and so the conductive medium **4** may be connected to the 0 volts line of the scanning apparatus, or in fact, to the positive line since the touchpad is floating. The scanning apparatus described in U.S. Pat. No. 6,137,427 relies on there being a reference ground to determine when it has been touched. Battery operated systems have no real ground and rely on the bulk of the system to act as a ground. This situation is improved if there is available nearby, some form of metalwork to act as a grounding means. Connecting the conductive medium **4** to the 0 volts line acts as a substitute for the metalwork. Its